

REMARKS

Claims 17 - 27 and 41 – 53 are pending. By means of this response, Claims 23 - 27 and 48 – 53 are cancelled. Claims 17 – 20 and 41 – 47 remain as previously presented. No claims are amended. New claims 54 - 61 are added.

I. Rejections under 35 USC §103

Claims 17, 18, 20, 41, 42, 46 and 47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the '428 patent to Obel et al. (Obel) and the '326 patent to Collins (Collins) in view of the '898 patent to Limousin (Limousin). Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Obel, Collins and Limousin as applied to Claim 17 and further in view of the '187 patent to Adams (Adams). Claims 43 – 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Obel, Collins and Limousin in view of the '277 patent to Sjostrand, et al. (Sjostrand). Applicant respectfully traverses all rejections.

In the present application, an apparatus is provided that combines the therapy treatments of cardiac resynchronization and nervous tissue stimulation to improve cardiac performance and efficiency. Among other things, the nervous tissue stimulation of the present application, when titrated to the appropriate levels, will substantially mimic beta-blockers by achieving the desired afterload (blood pressure) as well as preload (volume retention). Thus in amended Claim 17, for example, the nervous tissue stimulation is adjusted based upon monitored physiologic parameters. Importantly, Claim 17 expressly requires that the electrical stimulation is adjusted based on monitoring of the physiologic parameters during the applied cardiac resynchronization therapy. This feature allows optimization of the pressure-volume relationship, which is not provided by the cited prior art references.

In the rejections, Obel is cited as a device that adjusts electrical nerve stimulation during a cardiac pacing therapy responsive to physiological parameters monitored during that cardiac pacing therapy, as would be required by the claims.

However, this argument is simply erroneous. The device of Obel delivers cardiac pacing as a back-up during nerve stimulation. In particular, cardiac pacing is initiated at the same time and for the duration of the nerve stimulation. See Figure 2 and Column 7, lines 5 – 25. The basic premise of Obel is that heart pacing is only necessary during nerve stimulation due to its tendency to either slow heart rates or trigger other arrhythmias. Various pacing therapies may be delivered by various types of included pacemakers, but there is no disclosure in Obel that the included pacemakers are activated other than concurrent with nerve stimulation.

The nerve stimulation therapies of Obel are delivered according to pre-programmed parameters which are not varied during their delivery, i.e during the concurrent cardiac pacing therapy. As such Obel functions contrary to the limitations of claim 17 and all claims dependent thereon. While the parameters of the nerve stimulation therapies delivered by the Obel device may change over time, they change in response to events occurring before their delivery at the changed parameters, i.e. responsive to events that occurred prior to rather than during the delivery of the accompanying cardiac pacing therapy.

Because Obel does not include the teaching it is cited for and in fact teaches the contrary, the rejections of the claims over Obel are respectfully asserted to be insupportable. The cited Collins and Limousin references are not cited as containing this missing teaching and do not in fact contain this missing teaching. Withdrawal of the rejections of claims 17, 18, 20, 41, 42, 46 and 47 is thus respectfully requested

The Adams and Sjostrand references cited against claims 19 and 43 – 45 are not cited as making up for the deficiencies of Obel as discussed above with regard to claim 17 and in fact do not make up for these deficiencies. Withdrawal of the rejections of claims 19 and 43 – 45 is thus respectfully requested

Accordingly, applicant respectfully asserts that claim 17 as amended and all claims dependant thereon are patentable over the cited references. Withdrawal of the rejection under 35 U.S.C. § 103(a) of all previously submitted claims is respectfully requested.

Because no previously submitted claims have been amended, It is respectfully asserted that any new rejection of the previously submitted claims, including any rejection based on a new interpretation of the Obel, Collins, Limousin, Adams and/or Sjostrand references must take the form of a non-final rejection.

New claims 54 - 61 have limitations corresponding to those of the previously submitted claims, but rewritten very slightly for clarity and are believed patentable for the same reasons. Since all new claims contain all of the limitations of previously pending claim 17, it is respectfully asserted that a constructive election rejection cannot properly be made against these newly submitted claims. All subject matter of the new claims is believed supported by the previously submitted claims or the subject matter supporting them as discussed in conjunction with the previous amendment. Thus, no new matter is believed added by the new claims.

Conclusion

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

Should any issues remain outstanding, the Examiner is urged to telephone the undersigned to expedite prosecution. The Commissioner is authorized to charge any deficiencies and credit any overpayments to Deposit Account No. 13-2546.

Respectfully submitted,

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